

*Evaluation of the Netherlands Graduate Research School of Science, Technology and Modern Culture (WTMC).*

*Report by the International Peer Review Panel (April 2017)*

*Peer review panel members:*

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*Introduction*

This evaluation has been conducted in line with our interpretation of the Dutch Standard Evaluation Protocol (SEP) for 2015-2021. Since WTMC is a national graduate school, we have specifically amended the criteria indicated for PhD programmes presented in Appendix D of the main SEP document. This evaluation therefore focuses on the following criteria:

- a. context, supervision and quality assurance of WTMC;
- b. selection and admission procedures to WTMC;
- c. academic support for PhD candidates within WTMC and guidance of PhDs in relation to their career development.

We have also paid specific attention to the Research Integrity aspect of WTMC – especially in terms of the assistance, support and guidance given to PhD candidates. In addition, we have taken the opportunity to comment more broadly on the quality of PhD development and support offered by WTMC, the relevance of WTMC activities to broader society, and the School's capacity for future development.

As background to our report we received a full self-evaluation report from WTMC together with nine appendices covering, among other matters, a list of completed dissertations, a set of key publications by WTMC senior members, a summary of previous SEP evaluations of institutes participating in WTMC, and further practical information about the organisation of WTMC and its training activities. The WTMC self-evaluation report is an extremely comprehensive and carefully-considered document and this has helped our deliberations considerably. We would specifically like to thank the WTMC Director for her constructive, reflective and attentive approach to the evaluation.

At the core of this evaluation report was a panel meeting held in Utrecht on March 22-23, 2017. At this, we had a full discussion with the current WTMC Director (Sally Wyatt) and also the incoming director (Stefan Kuhlmann, currently chair of the research committee). We also participated in separate meetings with WTMC board members, current PhD candidates, WTMC alumni, the current coordinators and a group of experienced WTMC researchers and supervisors. Altogether, we met with some 30 people in the course of the review process. All of these meetings were characterized by a very open, engaged and self-reflective discussion and we are extremely grateful to all those involved for their active

participation. In addition, we can report that all materials were made available to us in good time and all practical arrangements were well-handled.

### *Overall Assessment*

In the opinion of the International Peer Review Panel, WTMC is one of the few most influential graduate schools in the world within the field of science, technology and innovation studies (STIS). We furthermore conclude that WTMC makes an outstanding contribution to society. WTMC builds upon an excellent research foundation within its field and is therefore excellently equipped in terms of future research capacity. On that basis, we assess WTMC as being of world-leading quality with regard to its doctoral training activities.

The Panel has no concerns about the level of research integrity awareness, training and development within WTMC. There is every indication that this issue is being taken very seriously within the graduate school and that this important matter is being actively handled in an appropriate and professional fashion.

In general, the Peer Review Panel is impressed by the quality of PhD training provided by WTMC and by the large collective effort from this cross-institutional group of scholars. Without exception, those we spoke with during the main Panel visit expressed their commitment and support for current WTMC activities – whilst also reflecting upon the rich heritage provided by this important Dutch institution. WTMC is a significant asset to Dutch research and training, and a beacon to other nations within its cross-disciplinary field.

### *Key issues and reflections*

The Netherlands Graduate Research School of Science, Technology and Modern Culture (WTMC) is one of the most prominent doctoral schools worldwide in the field of STIS. It provides an excellent academic environment, in terms of research and teaching, for its doctoral candidates. This excellence builds upon a combination of factors, including:

- (1) the strengths of its participating institutions (cf. the summary of the SEP evaluations of the institutes participating in WTMC: WTMC Self-Evaluation, p. 34) and the outstanding scientific quality of WTMC members, e.g. as assessed in terms of the research output of WTMC senior members (cf. WTMC Self-Evaluation, Appendix 7a);
- (2) the genuine and long term commitment to, and experience with, trans-institutional advanced training, benefiting from, and contributing to, thirty years of cooperation;
- (3) an educational model specifically devised for providing dedicated high quality, advanced training to PhD candidates in STIS;
- (4) a well-developed series of established practices and modes of organisation aligned with the educational model.

In the remainder of our report, we will focus on a series of questions and issues which we see as especially relevant to a broad evaluation of WTMC. For the sake of brevity, we will express these in 'bullet' form. For the same reason, we have chosen not to repeat material which is already well-

expressed in the WTMC self-evaluation document (although we refer to this on occasions). At various points within the text, we make specific suggestions for the further development of WTMC. These should be seen as hopefully-constructive proposals for further consideration rather than as fixed recommendations or requirements.

### *Research Programme*

- WTMC's focus on STIS (i.e. Science, Technology & Innovation Studies), rather than (only) STS, mirrors the thematic orientations of the Dutch research community in the concerned field(s). WTMC is the result of a deliberate joining of several related research strands (including STS, innovation studies, anthropology, history and philosophy of science) under one institutional roof in the well-founded expectation that the co-existence of the associated research perspectives will be beneficial to WTMC, i.e. to its PhD candidates and senior members, and to the Dutch research environment more generally;
- The excellence of this research programme manifests itself also in the way the second and third generations of scholars have steadily taken the lead and now themselves have earned a widespread international recognition. Whilst in other national contexts issues can arise as one generation hands over to the next, WTMC has ensured a smooth progression (even if senior colleagues will also be greatly missed);
- The interdisciplinary configuration comes with its own sets of benefits and challenges. It makes visible the affordances and the blind spots of the distinct perspectives and draws attention to the situatedness of all research. At the same time, it raises a set of questions in terms of selecting – and balancing – topics and methods as a focus for WTMC workshops in particular. This is already a matter for discussion within WTMC and we recommend that this reflection and review of academic activities should explicitly continue;
- The need for more open methodological discussion in order to broaden the range of methods used (including digital methods) and foster a tighter articulation between quantitative and qualitative approaches is directly addressed in the self-evaluation report. This is a key issue and again one that will require sustained reflection;
- In our opinion, there is scope for even greater attention to be paid within WTMC to the intersections and interactions between the constituent research strands. WTMC has done a very good job of holding together what has in other national contexts become a divergent set of academic professionalisations. However, this is an issue which requires constant attention and, as necessary, adjustment.

### *Educational Model*

- The inter-institutional nature of WTMC is an essential foundation for the Graduate School and is strongly associated with the aforementioned broad character of the underlying research programme. Since individual institutes can address only a selection of themes and issues, the pooling of resources across institutions in the context of WTMC results in the sharing of complementary expertise and knowledge on a wide spectrum of important research topics to the considerable benefit of the PhD candidates' training and development. In particular, this model (1) enables a very broad education in terms of theoretical, conceptual, thematic, methodological approaches; and (2) allows WTMC to target the needs of PhD candidates from widely different disciplinary backgrounds;

- This heterogeneity in terms of disciplinary orientations and the skills of its junior researchers represents an essential asset for the STIS field since it permits, among other benefits, the take-up of ever-new topics, e.g. transition studies, the new geography of knowledge, the emergence of Responsible Research and Innovation, issues of future-making. The WTMC's summer schools and thematic workshops constitute spaces where these new topics are presented and discussed;
- The diversity of students in terms of disciplinary background can also be viewed as a challenge that needs to be addressed by an appropriate educational model. The WTMC training activities are designed to be complementary to local provision, not only in terms of content but also of disciplinary orientation, and it is acknowledged that their added value is high. Especially newcomers benefit considerably from the intense and systematic introduction to the STIS field provided by WTMC resources (events, reading lists, scholarly networks);
- Evidence is provided in the self-evaluation report (p.9) to suggest that WTMC represents an important source of knowledge- and information-sharing through its website and mailing list. This role in publicising specific doctoral activities across Dutch (and even international) universities seems extremely important and the Panel encourages the Graduate School to play an active role in the identification of local training resources and in the facilitation of the access of doctoral scholars to these resources across locations (e.g. Master's courses offered by specific universities);
- In the WTMC educational model the roles of the teaching staff (anchor teacher, senior researcher, etc.) and the PhD candidates are rather distinct. The candidates and alumni whom the Panel met appreciate this distribution of roles, praising the quality of the programme and its excellent organisation and emphasising their own scope for active participation and influence. Looking to the future, the Panel recommends that WTMC considers the further fostering of bottom-up initiatives by PhD candidates;
- Another essential benefit of the WTMC educational model is that it encourages the building of deep relationships between PhD candidates and provides them with a safe learning environment. The emerging network is both intellectually stimulating and emotionally supportive and creates a sense of community that extends throughout the dissertation phase and beyond;
- Participation in summer schools and workshops is not only open to WTMC's PhD candidates but also to scholars from other places and countries. This flexible extension of the group of participants beyond the national STIS context is beneficial to the Dutch cohort;
- To further this international participation (without fundamentally altering the character of WTMC events and activities) the Panel proposes that foreign participants are selected according to well-considered criteria (i.e. not simply on a first-come first-served basis) so as, for example, to foster dialogue and interaction between national PhD candidates and those from the Global South. Going even further, it might be possible to find a means of actively encouraging international participation in selected circumstances (e.g. by providing fellowships for those from certain locations and backgrounds who cannot afford to pay fees).

#### *WTMC practices and organisation*

- The governance and management of WTMC (as described on pp. 11-12 of the self-evaluation report) are both inclusive of all the constituencies concerned and very effective. This structure has shown its value over a considerable period of time. Beyond the structure, the success of the formula is due to the high involvement and high sense of responsibility of the faculty members concerned – and especially those who have taken on direct roles in the running of WTMC;

- The selection and admission procedures allow that most interested institutions, scholars and doctoral candidates can participate. The size of the Graduate School, currently 169 members (116 academic staff, 53 doctoral candidates), is well adapted to the training activities provided. The intense interactions it allows strengthen the community. The alumni network is therefore a key asset for all the members of the community and plays a significant role in the interactions between academic research and policies for research and innovation;
- The Panel spent some time considering the relative importance within WTMC given to phase 1 and phase 2 of the programme. Our impression is that, whilst there is a considerable focus within WTMC on phase 1 activities, phase 2 could benefit from greater discussion and, as necessary, attention: for example, in terms of establishing greater involvement from local supervisors and, in particular, greater attendance at supervisors' days and PhD candidate presentations. This might also have beneficial effects on completion rates.

#### *Relation of WTMC with the local (supervision) context*

- The Panel saw no particular problems in terms of the relationship between WTMC and PhD supervisors. On the contrary, a close collegial network has developed over many years which in many cases makes this a seamless connection;
- However, we do think it is important to encourage the active participation of supervisors in dissertation days and other events. This could be a very good investment for all concerned as the changing conditions of universities (and in particular increased global competition between academic institutions) puts a strain on such cross-institutional activities;
- The Panel is specifically aware that the increasing formalisation and establishment of local support structures, e.g. separate graduate schools and associated training requirements, may in future interfere with the WTMC model and practice. We were also surprised to learn that at least one key academic institution in this field (UvA) is no longer formally engaged with WTMC as a 'participating institute' (although we understand that individual colleagues from that university do make a strong contribution to WTMC activities);
- The strengthening of graduate support at Dutch universities has many significant advantages and the Panel has no wish to argue against such moves. However, it is important that the best balance is achieved between local training and national schemes such as WTMC. This is also an argument for active involvement of senior scholars in WTMC so as to ensure flexible and open communication between national and university-specific activities.

#### *Completion time and rate*

- As the Panel understands it, PhD completion is the prime responsibility of local institutions, which limits the role and intervention of WTMC. The data provided show that performances in the STIS field are comparable with those in related fields;
- Whilst this is not therefore seen by the Panel as a specific problem for WTMC, the Graduate School may nevertheless have an indirect influence on completion rates and may also have advice to offer about, for example, the most appropriate format for dissertations in this field. Recognising that WTMC already is active in phase 2 of PhDs, it might be timely for WTMC to reflect further upon its own contribution to successful PhD completion and how best it might be able to offer support to PhD candidates in the crucial final phase of their work.

### *Careers and career development*

- Career opportunities for WTMC PhDs appear to be generally very good. More specifically, most of the PhDs find academic positions (67%) or related research and policy employment (25%);
- Whilst this is impressive, the potential for employment in non-academic positions is specifically important. It may therefore be relevant for WTMC to be more proactive in the way(s) it addresses this potential. This could have benefits both for the future careers of current PhDs and also the wider contribution of STIS to society.

### *Research ethics and integrity*

- As noted in the WTMC self-evaluation (p.10), WTMC addresses research integrity both as an object of critical analysis and as a practice to be trained and developed. It is also true that STIS researchers are often turned to as experts on precisely these issues and concerns (as the self-evaluation specifically lists with regard to active participation in national and international ethics committees);
- In particular, a number of activities aimed at PhD scholars have taken place within WTMC which address related issues. These include a PhD workshop, a session within the WTMC Annual Meeting, and a very useful survey of PhD members;
- The Panel therefore has no concerns about the treatment of this broad issue within WTMC and indeed would positively encourage the dissemination of STIS research in this field to other senior and junior researchers. In addition, the Panel notes the survey's conclusion that, whilst issues of scientific integrity are addressed to an acceptable level, further development in the curriculum would be welcomed. Certainly, there is a good case for (as the survey report puts it) integrating scientific integrity 'more consistently... throughout the PhD's education' (Caspar Roelofs and Mayli Mertens, Report to WTMC).

### *Diversity*

- The WTMC self-evaluation (p.12) provides some helpful evidence about gender diversity in particular, noting that 60% of current PhD members are women and 46% of senior members. In the Panel's assessment, gender issues are being taken extremely seriously within the graduate school: in terms of research conducted within STIS, of the gender balance among participants, of the actual design of WTMC activities and, not least, of WTMC leadership. This is indeed exemplary and could be a model for other activities across both Dutch and international universities;
- The Panel understands that ethnic and cultural diversity is more challenging within Dutch universities. However, it does encourage WTMC to continue to reflect upon this issue and to sustain its policy of taking diversity matters seriously. This may be an area where the recruitment of non-Dutch participants in WTMC activities could be especially helpful.

### *Relevance to Society*

- In the Panel's opinion, WTMC activities are characterised by a high level of societal relevance: both in terms of the research content and focus of doctoral activities (which often address topics of widespread societal, political and economic significance) and specific efforts made by

both junior and senior members to take such matters seriously in practical engagement terms. Ample evidence of this is given in the WTMC self-evaluation (specifically pp. 16-22);

- In particular, STIS research and the expertise of WTMC members are closely aligned with pressing policy issues (concerning the role of science, technology, knowledge, and expertise in contemporary societies) that are addressed, in often controversial ways, by political actors, different stakeholders and the public (e.g. RRI, grand societal challenges, transition studies & sustainable development, health, future of science systems);
- Members of WTMC contribute to this debate (a) through their research, (b) through training the next generation of experts, (c) by playing an increasingly important role as public intellectuals and expert advisors, and (d) by representing an important national and international focus point and resource. WTMC scholars do not only reflect larger intellectual and policy discussions. They are also important opinion leaders and the active developers of new policy agenda;
- In this circumstance, the Panel did reflect upon whether selected WTMC events could be opening up to larger publics in order to foster societal debate – for example, by drawing upon visiting international scholars whilst attending WTMC workshops. We understand that there may be practical difficulties with such arrangements – due in particular to the location of Summer Schools. However, this matter might be worth further consideration in order to enhance the external impact and visibility of WTMC.

#### *Viability and future challenges*

- The Panel did specifically raise questions about what it initially saw as the low level of enrolment of PhD candidates within WTMC. It understands that this figure must be seen in the context of the relatively (by international standards) high cost of a PhD scholarship in The Netherlands. Seen in this light, the numbers are reasonable but every effort should be taken that they do not fall further below what seems to be the low-point of recruitment in 2016. Our understanding is that the recruitment situation already looks much more positive for 2017;
- Apart from the challenges of continuously attracting PhD funding (an area where STIS researchers in The Netherlands seem to have performed extremely well), the only threat to this well-performing activity seems to be in the potential relationship with local sources of PhD training. It would be deeply unfortunate if the strengthening of PhD education in Dutch universities worked to the detriment of successful national activities such as WTMC. As of now, we see no specific signs of this but can only note it as a (hopefully remote) possibility.

#### *Final statement*

In summary, the Panel found no major weaknesses in the current operation of WTMC. In addition, there were no significant criticisms made by current or previous participants. On the contrary, WTMC has succeeded over many years in building a sense of community and shared purpose (among both junior and senior colleagues) within what might otherwise be represented as a rather heterogeneous group of participants. It does seem to the Panel therefore that WTMC represents a significant demonstration of what can be achieved by a national school of this sort – working in partnership with local supervisory environments and specific research groupings. Certainly, the strong reputation of WTMC has spread internationally and is a model closely studied (and much admired) in other national contexts. We also note the significant impact of STIS activities within larger Dutch and European society – including in the operation of the Rathenau Instituut and related discussions over topics such as Responsible Research and Innovation.

In closing, the Panel commends the activities both of those who directly work to maintain and develop WTMC (including the PhD scholars themselves) and the participating institutions for their continued support – both in budgetary and personnel terms. It is clear that the successful operation of WTMC requires organisation and effort but also a considerable amount of care and commitment from an evolving group of dedicated individuals. As the July 2010 evaluation observed, ‘WTMC is, in short, a labour of love’ (p. 9) and we can only fully agree with this statement. This is a substantial achievement within the Dutch research environment and one which seems well-placed for further success.